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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,207	04/16/2004	Jerry H.C. Lee	25341A	1155
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OWENS CORNING 2790 COLUMBUS ROAD GRANVILLE, OH 43023			EXAMINER MATZEK, MATTHEW D	
			ART UNIT 1771	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/826,207

Applicant(s)

LEE ET AL.

Examiner

Matthew D. Matzek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-15 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) 26 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-15 and 17-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. The amendment dated 3/7/2007 has been fully considered and entered into the Record. Claim 9 has been amended and new claims 24-27 have been added. The amended and new claims contain no new matter. Newly submitted claims 26 and 27 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: new claims 26 and 27 are directed to a method of making a roof covering rather than the roof covering itself.
2. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 26 and 27 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.
3. Claims 1-3, 5-15 and 17-27 are currently active, but claims 26 and 27 have been withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to Examiner as to how the elemental sulfur reacting with the double bonds in the asphalt anchors said asphalt.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 5-8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Marzocchi et al. (US 4,265,563).

a. Miller et al. teach an asphalt-based roofing material comprising a substrate coated with asphalt (Abstract). The roofing material comprises a glass fiber substrate coated with asphalt and a surface layer of granules embedded in the asphalt coating (col. 1, lines 13-20). Miller et al. is silent as to use of a silane-sizing agent for the glass fibers in the asphalt.

b. Marzocchi et al. teach that glass fibers may be used as reinforcement in resins, rubbers, and asphalt (organic material) for use in roads, driveways, bridges, walks and roofs (col. 2, lines 10-20). The glass fibers may be treated with a silane coupling (sizing) composition along with sulfur leaving secondary or primary as well as elemental sulfur dispersed on the surface of the glass fibers (col. 9, lines 35-43). When added to a resin system (asphalt, tar, etc.) the glass fibers become directly bonded to the resin phase to improve strength and impermeability of the properties of the matrix (col. 9, lines 43-50). The sulfur content of the silane coating may be from 0.05 to 40% with a preference from 0.1 to 7% (col. 9, lines 54-59). Overlying the substrate layer 1 (fiberglass) is a wear course 2 comprising an aggregate and asphalt mixture (col. 4, lines 3-5). The asphalt

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aggregate may comprise clays, gravel, glass flake or calcium carbonate (col. 4, lines 53-69). In one embodiment an asphaltic, glass flake layer is added on top of the substrate (fiber/asphalt) layer (col. 5, lines 55-63).

c. Since Miller et al. and Marzocchi et al. are from the same field of endeavor (i.e. asphalt covered fiber glass building materials), the purpose disclosed by Marzocchi et al. would have been recognized in the pertinent art of Miller et al.

d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the glass fiber mat of the composite of Miller et al. with the silane sizing agent with the motivation of improving the adhesion between the fiber glass and asphalt phases.

e. Although Miller et al. nor Marzocchi et al. explicitly teach the claimed feature of forming cross-links between the sulfur groups and the organic material, the claimed tear strength or the claimed tensile strength, it is reasonable to presume that said properties are inherent to Marzocchi et al. Support for said presumption is found in the use of like materials (i.e. glass fibers sized with a sulfurous silane composition and coated with an organic material). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties of claims 1, 6 and 22 would obviously have been present one the Marzocchi et al. product is provided. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner, et al.* (CCPA) 186 USPQ 80.

6. Claims 2, 9-15, 17-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Marzocchi et al. (US 4,265,563) as applied to claim

1 above, and further in view of Williams et al. (US 4,210,459). While Marzocchi et al. teach silane-coupling agents for the glass fibers it is silent as to use of a sulfide silane.

a. Williams et al. teach the use of a polysulfide silane-coupling (sizing) agent for glass fibers in rubber composites (Abstract). The coupling agent may also comprise vinyl groups, yielding a vinyl silane (col. 4, lines 13-40). It is generally preferred to size the fibers prior to their incorporation into the composite (col. 14, lines 48-60). The polysulfide organosilicon-coupling agent may also be added to the rubber matrix and the sulfur concentration may be from about 0.5 to 4 weight percent of said matrix (col. 13, lines 47-52 and col. 14, lines 24-28).

b. Since Miller et al. and Williams et al. and from the same field of endeavor, (i.e. fiber glass in organic matrices), the purpose disclosed by Williams et al. would have been recognized in the pertinent art of Miller et al. and Marzocchi et al.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the sulfide silane coupling agent of Williams et al. on the glass fibers as well as in the matrix motivated by the desire of simplifying the coating of the glass fibers to one chemical treatment and to improve the strength of the resin phase with the addition of the polysulfide silane.

d. Although Miller et al. nor Williams et al. explicitly teach the claimed feature of forming cross-links between the between the sulfur groups and the organic material, double-bonds, the claimed tear strength or the claimed tensile strength, it is reasonable to presume that said properties are inherent to Williams et al. Support for said presumption is found in the use of like materials (i.e. glass fibers sized with a sulfurous silane

composition and coated with an organic material). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties of claims 9, 18 and 23 would obviously have been present one the Williams et al. product is provided. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner, et al.* (CCPA) 186 USPQ 80.

e. Claim 10 is rejected as the polysulfide silane disclosed by Williams et al. possesses sulfur and vinyl groups (col. 4, lines 18-34).

f. Claim 14 is rejected as the combination of the instantly applied art yields an article that is compositionally and structurally the same as that of Applicant.

g. Claims 19 and 20 are rejected as the amount of sulfur instantly applied meets the limitations of claims 19 and 20 and provides the bonding between the glass fibers and the asphaltic matrix (col. 14, lines 24-34).

7. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Marzocchi et al. (US 4,265,563) and Williams et al. (US 4,210,459) as applied to claim 9 above, and further in view of Kennepohl et al. (US 4,079,158). The disclosures of Miller et al., Marzocchi et al. and Williams et al. fail to teach the use of elemental sulfur in the asphalt matrix.

a. Kennepohl et al. disclose the dispersion of sulfur in asphalt that is used to make roofing to obtain improved fire resistance. The admixture of elemental sulfur with roofing grades and similar grades of asphalt is readily achieved by blending sulfur in liquid form into the asphalt in fluid form (col. 3, lines 3-10). Fiberglass webs can benefit

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from the saturation and/or coating with sulfur asphalt blends in lieu of regular asphalt (col. 9, lines 4-15).

b. Since Miller et al. and Kennepohl et al. are from the same field of endeavor, (i.e. asphalt roofing materials), the purpose disclosed by Kennepohl et al. would have been recognized in the pertinent art of Miller et al. and Kennepohl et al.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used the sulfur asphalt blend of Kennepohl et al. in the article of Miller et al. motivated by the desire to obtain improved fire resistance.

Response to Arguments

8. Applicant's arguments filed 3/7/2007 have been fully considered but they are not persuasive.

9. Applicant has requested that Examiner reconsider the previously submitted arguments and declaration and insists that the combination of Miller et al. and Marzocchi et al. and the combination of Miller et al. and Williams et al. is improper because they are from different fields of endeavor. Examiner has reconsidered the submitted declaration and Applicant's arguments and arrives at the previously submitted conclusion. As set forth in the prior art section of Marzocchi it is well known that glass fibers have been used extensively in the reinforcement of resins, rubbers and asphalts (col. 2, lines 12-15) in the creation of both roof coverings and road foundations (col. 3, lines 3-41). Therefore, one of ordinary skill in the art would have been motivated to look to Marzocchi to improve the adhesion between the glass fiber and asphalt matrix phases as they are used in the inventions of Miller and Marzocchi are from the same field of endeavor, asphalt construction materials. Mr. Jones' expert opinion has been taken into

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account, however both Miller and Marzocchi use asphalt matrices with glass fiber reinforcement and both Miller and Williams set forth glass fibers in organic matrices. By improving the bond between the matrix and reinforcement phase of the composite the structural integrity of the article is improved. Therefore, it would have been reasonable for one of ordinary skill in the art to look to other asphalt or organic composites that use glass fibers for reinforcement for means to improve adhesion between the two phases of the composite.

10. Applicant argues that the combination of Miller et al., Marzocchi et al. and Williams et al. fail to teach or suggest a bonding material included in a sizing and sulfur added to an asphalt-based coating material. Both Marzocchi et al. and Williams et al. teach the use of silane coupling agents for use on the glass fibers' surface to enhance the bonding between the matrix and fibers. Williams et al. also teach the inclusion of the polysulfide-coupling agent into the organic matrix, which provides the claimed sulfur in the coating material.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is 571.272.2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571.272.1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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